Channel Mitigation Monitoring Sheets I, II, III, AND IV

Monitoring Data Record

Project Title: R-2552B Clayton Bypass COE Action ID: 200220745
Stream Name: Site 5 DWQ Number: 041760
City, County and other Location Information: US 70 Clayton Bypass from I-40 to US 70
Station 82+60 to 85+50 –L-
Date Construction Completed: 4/21/06
Monitoring Year: (4) of 5
Ecoregion: 8 digit HUC unit 03020201
USGS Quad Name and Coordinates:
Rosgen Classification:
Length of Project: 410' Urban or Rural: Rural Watershed Size:
Monitoring DATA collected by: M. Green and J. Young Date: 1/7/10
Applicant Information:
Name: NCDOT Roadside Environmental Unit
Address: 1425 Rock Quarry Road Raleigh, NC 27610
Telephone Number: (919) 861-3772 Email address: mlgreen@ncdot.gov

Consultant Information:
Name:
Address:
Telephone Number: Email address:
Project Status: Complete

Monitoring Level required by COE and DWQ (404 permit/ 401 Cert.): Level (1) ~~2~~ ~~3~~
Monitoring Level 1 requires completion of *Section 1, Section 2 and Section 3*

Permit States: **(200220745)** NCDOT shall perform the following components of Level I monitoring twice each year for the 5 year monitoring period (summer and winter): Reference photos, plant survival, and visual inspection of channel stability. If less than two bankfull events occur during the first 5 years, NCDOT shall continue monitoring until the second bankfull event is documented. The bankfull events must occur during separate monitoring years. In the event that the required bankfull events do not occur during the 5-year monitoring period, the USACE, in consultation with resource agencies, may determine that further monitoring is not required.
(041760) Riparian vegetation reestablishment shall include a minimum of at least 2 native hardwood tree species planted at a density sufficient to provide 320 trees per acre at maturity. In addition, within one year proof shall be submitted that the riparian buffer has been restored and an annual report will be submitted for a period of 5 years showing that the trees and vegetation have survived and that the diffuse flow through the riparian buffer has been maintained. Failure to achieve the 320 trees per acre after 5 years will require reporting by DOT to DWQ. The report shall provide appropriate remedial actions to be implemented. Approval of the plan by the DWQ is required.

Section 1. PHOTO REFERENCE SITES
(Monitoring at all levels must complete this section)

Total number of reference photo locations at this site:
A total of 8 photos were taken from 4 photo point locations.
Dates reference photos have been taken at this site: 3/14/07, 7/16/07, 3/17/08, 6/19/08, 1/29/09, 6/17/09, 1/7/10

Individual from whom additional photos can be obtained (name, address, phone):

Other Information relative to site photo reference: A site map is included with this report showing the photo point locations.
If required to complete Level 3 monitoring only stop here; otherwise, complete section 2.

Section 2. PLANT SURVIVAL
Attach plan sheet indicating reference photos.

Identify specific problem areas (missing, stressed, damaged or dead plantings):

Estimated causes, and proposed/required remedial action:

ADDITIONAL COMMENTS: Planting was completed at this stream relocation in March 2007. The following planted species were found on the streambank: black willow and silky dogwood live stakes. In the buffer area: red oak, river birch, yellow poplar, sycamore, and white oak bareroot seedlings. One 50 x 50 foot vegetation plot was set in the buffer area. As stated in last monitoring report, some additional live staking and buffer planting was completed on 3/11/09 which brought the planted total up to 45 trees within the vegetation plot. Year 3 Summer plant survival counts were conducted during June 2009 monitoring evaluation with the results showing an average density of 680 trees per acre, which is well above the minimum success criteria of 320 trees per acre. Black willow and silky dogwood live stakes are surviving along the streambank. Other species noted on site included fennel, lespedeza, cattail, *Juncus* sp., sweetgum, briars, smartweed, baccharis, goldenrod, volunteer yellow poplars, clover, privet, wax myrtle, sedge, pine, alder, and various grasses. NCDOT will continue to monitor plant survival at this stream relocation during the summer 2010 evaluation.
If required to complete Level 1 and Level 2 monitoring only stop here; otherwise, complete section 3.

Section 3. CHANNEL STABILITY

Visual Inspection: The entire stream project as well as each in-stream structure and bank stabilization/revetment structure must be evaluated and problems addressed.

Report on the visual inspection of channel stability. Physical measurements of channel stability/morphology will not be required. Include a discussion of any deviations from as-built and an evaluation of the significance of these deviations and whether they are indicative of a stabilizing or destabilizing situation.

The stream relocation is stabilized for the Year 4 Winter evaluation, except for some minor bank scouring on the right bank at Photo Point #4 (Sta. 11+10-S-). There is also some erosion at the inlet end of the box culvert around the right wing wall. NCDOT is planning to repair the area around the right wing wall in the near future. NCDOT will continue to monitor the channel stability at this stream relocation.

Date 1/7/10	Station Number 11+10–S-	Station Number 11+20-S- (additional photo)	Station Number	Station Number	Station Number
Structure Type					
Is water piping through or around structure?					
Head cut or down cut present?					
Bank or scour erosion present?	Minor bank scouring on right bank	Bank erosion at inlet end of box culvert around right wing wall			
Other problems noted?					

NOTE: Attach separate narrative sheets to each monitoring report describing/discussing the overall monitoring results. Include the identification of specific problem areas/channel failures, estimated cause and proposed/required remedial action. This should include a brief discussion of any parameter that has changed significantly from as-built.

R-2552B Clayton Bypass

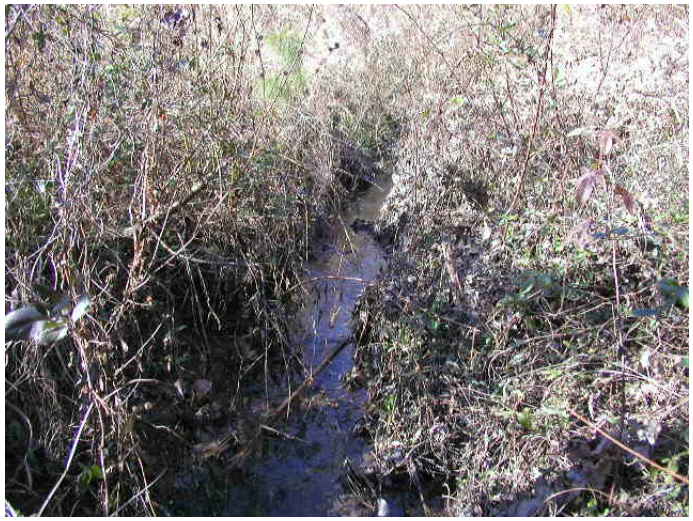


Photo Point #1 (Upstream)

Photo Point #1 (Downstream)

Photo Point #2 (Upstream)

Photo Point #2 (Downstream)

Photo Point #3 (Upstream)

Photo Point #3 (Downstream)

R-2552B Clayton Bypass

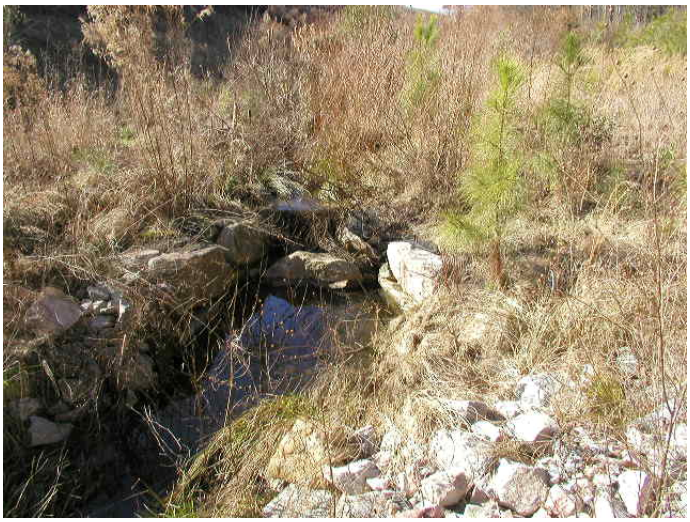
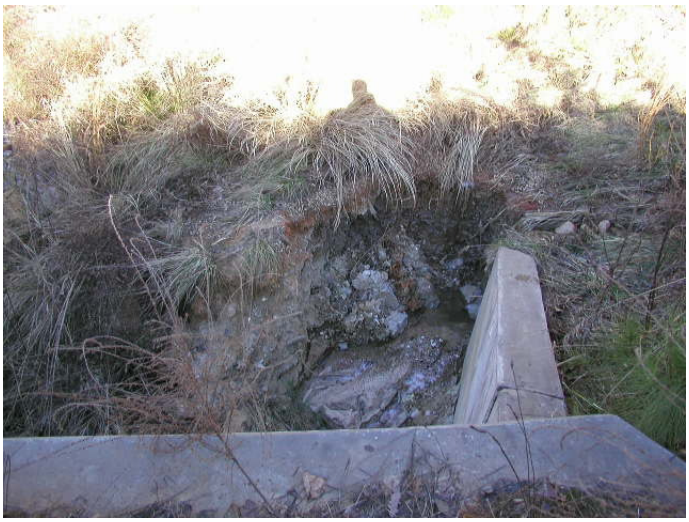


Photo Point #4 (Upstream)

Photo Point #4 (Downstream)

(Overview Photo of Site)



Erosion at inlet end of box culvert around right wing wall

Year 4 Winter – January 2010

METRIC	PROJECT REFERENCE NO.	SHEET NO.
2.5 1 5	R-2552B	2-1
CONST REV	R/W SHEET NO.	
R/W REV	HYDRAULICS ENGINEER	

CLAYTON BYPASS STREAM RELOCATION R-2552B (SITE 5)